
AI AND PATENT RIGHTS IMPACTS OVER INVENTORSHIP AND OWNERSHIP

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ABSTRACT

This article explores at the complicated connection between patent law and AI and how it impacts creator rights and who owns AI inventions. As AI gets better, it's leading to new innovations in more fields. Because AI systems can make ideas without any help from humans, it's hard to figure out who came up with them, who made patents and owns the rights to them. Some law experts think AI should be recognized as an inventor to encourage creativity, while others think inventions should only be made by humans. These arguments make it clear that ownership and inventorship problems need to be solved in a way that encourages an open, responsible, and fair innovation ecosystem. To strike a balance between innovation and ethics, lawmakers and government officials are thinking about adding AI ownership and inventorship to copyright rules. Stakeholders can make sure that AI-generated technologies help society while protecting ethics and rights by explaining regulatory frameworks and encouraging responsible innovation.

Keywords: Patent law, AI, ownership, innovation, inventorship, ethics, regulatory framework, transparency.

INTRODUCTION

Recent advances in AI technology have revolutionized healthcare, banking, manufacturing, and entertainment. As technology has improved, patent law and AI have converged, creating new opportunities and challenges for entrepreneurs, attorneys, and policymakers. Patent law has traditionally protected and encouraged invention by granting creators exclusive rights to their innovations. The rise of AI is transforming this picture, raising problems about ownership and inventorship. AI systems can independently invent, unlike human inventors, making patent law more fluid. Understanding AI's effects on ownership and inventorship is vital. As AI drives innovation, understanding the ethical and legal complexities of attributing ideas to non-human and human entities is crucial. Ineffectively handling these obstacles may lead to innovation issues, IP disputes, and technological crash. The concept of patent law and AI will help to examine the complex relationship between inventorship and ownership of inventions. In the AI era, recognizing creators and ownership is tough by reviewing the legal framework, new advances and ethical challenges the relationship and complications can be made clear.

THE ROLE OF ARTIFICIAL INTELLIGENCE IN INVENTIONS

In recent years, artificial intelligence (AI) has become a powerful tool for innovation in many fields. AI's pattern-recognizing, data-analysis, and prediction skills have disrupted problem-solving wisdom and spurred the creation of previously inconceivable solutions. Examination of several AI-generated inventions from diverse industries and explaining how AI is being used in innovation helps to keep a balance in the idea of role of AI in inventions. AI covers things like computer vision, machine learning, natural language processing, robots, and more. These tools are used at all stages of innovation, from coming up with ideas to make evidence to bring out the best version possible. AI is very flexible, so it can solve hard problems in banking, healthcare, industry, transportation, and other areas, which leads to new ideas. AI's most important contributions are automating boring but necessary jobs and doing a lot of calculations at once. In drug research, AI programs look through genetic data, clinical records, and molecular structures to find new drugs that look promising and safe and effective in the field they are obliged to work for. This makes it easier to treat illnesses, speeds up the process of making drugs, and cuts down on costs.

Adaptive manufacturing, quality control, and production optimization are all possible with automation systems that are driven by AI. Because these technologies can be changed in real

time, they make plant floors more flexible, productive, and efficient. AI programs also look at economic data, market trends, and customer behaviour to make the best decisions and plans for marketing and banking. This approach is based on data, and it can help companies target better, make their products more relevant, and get ahead of the competition.

EXAMPLES OF AI-GENERATED INVENTIONS

AI has affected new ideas in many fields, and some of the biggest steps forward in AI have changed technology and society. Some of the examples include Diagnostic tools that use AI, like IBM Watson Health, are becoming more popular in healthcare. Doctors can use these technologies to scan clinical data, medical images, and patient information to make diagnoses, make predictions, and make personalized treatment plans. Self-driving cars with AI algorithms and sensors will be very good for the transportation business. These cars could cut down on traffic, make it easier for crippled people to get around, and get rid of the need for drivers. Financial trading algorithms that are powered by AI look at market data in real time to find trading chances, make investment portfolios better and handle risks better than people can. AI algorithms are used by e-commerce platforms to figure out what goods customers want, suggest products, and make the shopping experience more personal in order to boost conversion rates and customer satisfaction. Art, music, and writing made by AI are changing what it means to be creative and express yourself in the creative fields. AI systems can write songs, stories, and poetry. These examples show how AI can be used to make things, be creative, and change many fields. As AI gets better and is used in more areas of life, it's important to understand how it helps with innovation and think about the moral and legal issues it raises.

CURRENT PATENT LAW FRAMEWORK

Patent law gives creators temporary exclusive rights to their works, fostering innovation. The public's interest is in restoring innovation and circulation of knowledge but patent law balances inventors interests in protecting their inventions.

OVERVIEW OF TRADITIONAL PATENT LAW PRINCIPLES

Patents allow people with new ideas to sell them to the public in exchange for information about the ideas. This encourages people to come up with new ideas. By calling for openness, we might all get information that makes ideas and technology better. Innovations that can be

patented must be new, useful, and not Obvious. To be called innovative, a new idea has to be kept secret until the patent application. For an idea to be new, it must have a step that no expert would have thought of. An idea is useful if it does something important and gives people something they can measure. The person who made the product can't make, use, sell, or bring it into the country for twenty years after the patent application date. During this time, the copyright owner can trade or sell their new idea to make money.

INVENTORSHIP AND OWNERSHIP IN PATENT LAW

A crucial concept in patent law is "inventorship," which specifies those who contributed to an invention. Patent law determines inventorship based on each person's inventive contribution to the claimed invention. Not often the individual who came up with or implemented the idea is the inventor. Ownership means the legal right to control and use the patented innovation. Except in circumstances when an agreement or assignment transfers ownership rights to a third party, such as an investor or employer, the inventor or inventors, alone or together, normally possess a patent. Traditional patent law assumes that the inventor or inventors control the patent rights. Issues may arise when multiple people or organizations work together to implement an invention, such as in a research project or job arrangement.

CHALLENGES AND LIMITATIONS

New technologies like artificial intelligence challenge the normal patent law system, which promotes innovation and protects IP rights. Finding the inventor and owner of AI breakthroughs is tough. AI systems can generate new ideas without human assistance, raising the question of whether AI is an inventor and who should take credit. Patent law which today assumes human ownership and inventorship cannot handle these issues. Conventional patent law promotes innovation and protects IP. However, AI's complexity presents challenges. Redefining patent law's notions of ownership and inventorship is necessary to ensure the legal structure encourages creativity and technical improvement in light of AI's continuous role in innovation.

CHALLENGES IN DETERMINING INVENTORSHIP FOR AI-GENERATED INVENTIONS

AI has complicated patent law, especially how to identify the genuine originator of AI-generated ideas. AI-generated inventions raise questions about patent rights and inventor

acknowledgment, unlike human-created ideas. AI's issues in allocating inventions to human inventors are of high importance which can be examined through various case studies and legal precedents that describes complexity of the term inventorship.

DIFFICULTIES IN ATTRIBUTING INVENTIONS TO HUMAN INVENTORS

AI systems are naturally independent, it's hard to give invention rights to AI findings. AI systems don't have human creators instead, they use data and algorithms. This makes it hard to prove who created what. AI systems can help designers come up with new ideas, but they aren't always as good as human partners. As they get better, some AI systems will come up with ideas on their own. It comes up the question of whether AI can be a patentable creator. In the age of AI, creativity is shared which makes it hard to find the original creator. It might be hard to tell the difference between human and AI innovation efforts in research and development settings where AI systems are used with human researchers. Patent law, which is built on human invention, is in danger because humans and robots are becoming more and more similar. According to several case studies and precedents, AI ideas are getting harder to attribute to the creator, hence patent law needs to be clarified. Dr. Stephen Thaler's DABUS artificial intelligence system is an example. Dabus independently created fractal-based food containers and attention-grabbing devices. DABUS is identified as Dr. Thaler's 2019 patent inventor. The US, UK, and EU patent offices denied the applications because patent law requires human inventorship. These verdicts divided the legal and IP worlds, with many wondering if AI should be regarded an inventor and how it might affect patent law. AI-driven pharmaceutical breakthroughs can be considered to determine the effect. Artificial intelligence algorithms are increasingly used in the pharmaceutical sector to search vast data sets for new drug ideas. In many cases, invention may involve human and AI-driven data analysis, making credit assignment problematic. By examining different case studies and legal precedents it can be concluded that AI-generated concepts require competent inventorship. As AI technologies become more important to innovation, establishing inventorship and keeping patent law functioning in the digital era become more difficult. Legal experts and legislators must solve these issues. AI-generated innovation authorship issues must be examined under patent law. Innovation is collaborative and AI systems are autonomous, making it hard to attribute ideas to humans. The complexity of inventorship in the AI era should be emphasized by legal professionals to provide clarification and assistance in the subject matter. It is the duty of the

authorities to tackle the concerns to foster innovation and keep patent law as a robust and fair tool for IP protection due to the advancement in AI.

AI AS AN INVENTOR

Intellectual property experts, policymakers, and legal scholars have debated whether artificial intelligence (AI) is a patent inventor. Different countries have approached this issue as AI technology improves and becomes more prominent in innovation. The argument about who invented artificial intelligence is based on the fact that old patent laws don't work with digital technologies. Some people think that copyright law should recognize AI systems as inventors because they can come up with ideas without any help from a person. They say that denying AI inventor status will make it harder to get money for study and new ideas in AI. Some people say that patent law is unfair because it believes that people are more creative than AI. They say that giving AI credit as an inventor will make the copyright system less clear. They tend to argue against IP law and believe that recognizing AI as an inventor brings up moral questions about how open and responsible invention should be.

Traditionalists say that AI doesn't have the mental capacity to be legally recognized as an inventor because patent law is built on inventions made by humans. Giving artificial intelligence the power to be a creator would hurt the patent system by breaking the law. The functionalist view focuses on the useful abilities of AI systems and thinks of AI as a creator if it made a big difference in the creative process. This point of view calls for an inventorship concept that can be changed to fit the properties of AI systems. The pros and cons of utilitarianism look at what recognizing AI as a creator would mean for policy. Acknowledging AI as an innovator will lead to more creation and spending on research and development and create issues of novelty and responsibility that needs to be dealt with.

JURISDICTIONAL APPROACHES

Diverse jurisdictions have diverse views on artificial intelligence inventorship due to cultural values, policy goals, and legal traditions. AI inventorship is more permissive in some nations and more conservative in others. The USPTO is apprehensive about AI inventorship, thus patent applications must list human inventors. USPTO has dismissed patent applications that name AI systems as inventors because patent law requires human inventorship. The EPC's requirement of human inventorship has led the EU's patent office to reject AI system patent

applications, like the USPTO. However, the EPO has held conferences and workshops to debate policy options. The UK has become more open to AI inventorship with a 2020 UKIPO survey. The survey asked for opinions on policy issues such as amending patent laws to recognize AI inventorship. AI inventorship was also discussed in Australia's 2020 government consultation. The consultation discussed legislative legislation or patent office guidance to address AI inventorship issues. AI creation creates major policy and legal problems that must be explored. Different legal schools disagree on whether artificial intelligence should be patented as an inventor, reflecting different objectives,

beliefs, and governmental aims. AI technologies are rapidly advancing and affecting innovation, so lawmakers, legal scholars, and consumers must work together to create well-thought-out policy responses that balance inventors', consumers', and society's interests.

IMPLICATIONS FOR OWNERSHIP OF AI-GENERATED INVENTIONS

When it comes to patent law, finding the inventor of AI-generated ideas has big effects on ownership rights. People have thought for a long time that the person or people who came up with the idea should first own the rights to the patent. Still, the fact that AI is naturally autonomous raises questions about who should own innovations made by AI. The idea that AI makers, users, and owners of innovations made possible by AI could fight with each other is another threat. The disagreements that might happen and finding out who invented something changes who owns the idea. In patent law, there is a close connection between being a creator and having the right to own something. Unless someone else can show ownership through an agreement or transfer, the first person or people who owned the patent rights are thought to be the ones who came up with the idea. It's harder to figure out who the real creator is when the invention was made by AI. The difficulty in finding out who should be credited as the inventor and owner of the patent rights comes up when an AI system comes up with a new idea without any help from a person. The ownership of the system is also in question, the person who used or owns it, or the AI creator who made it should be given the ownership. On the other hand, the question of AI be seen as the author and owner even though it doesn't personally exist is to be discussed and answered by experts. Figuring out who invented something and who owns the rights to it has big effects on how patent rights are distributed, license deals, and strategies for commercialization. It changes how the benefits of innovations made by AI are shared and the reasons why people spend in AI research and development.

If an AI system comes up with a new idea while being used by someone else, like a business or university, the question of who gets to keep the patent rights must be resolved. People who own or use the AI system may say that they should be recognized as the creator and owner. On the other hand, people who made the AI may claim ownership based on their intellectual property rights in the AI technology. Researchers who make AI might try to make money by giving other companies rights to use their work in AI research and development. If the licensing deal doesn't say who gets to keep any new ideas made with the AI, though disagreements may arise. Users who want to make sure they can make money from new ideas created by AI may try to keep the rights to those ideas or negotiate good licensing terms. It can be hard for people who own ideas generated by AI to sell their products when they aren't sure who owns them. If a business can't legally claim ownership of its intellectual property, it might turn away possible investors, partners, and licensees.

POLICY AND LEGISLATIVE DEVELOPMENTS

Legislators and politicians are exploring legislative responses to AI-generated breakthroughs. The amendments address how artificial intelligence affects patent law, the innovation ecosystem, ownership, and inventorship. Recent legislative attempts have focused on making innovation more open and responsible and defining AI innovation ownership. Lawmakers are debating whether to amend patent regulations to recognize AI as an innovator and establish ownership rights. Current legal frameworks would need to be rethought and new laws may need to be created to accommodate for AI's unique qualities. Legislators are considering licensing agreement negotiating guidelines and ownership dispute resolution methods to make AI-generated technologies easier to license and market. AI inventors, customers, and owners may need to cooperate to accomplish fair benefit sharing. Lawmakers are also considering AI-generated inventions' ethical and legal implications to promote transparency, accountability, and equity in innovation. Creating moral criteria for AI inventors, users, and owners may be involved. Changes in AI-generated innovation policy and laws could have farreaching effects on the innovation ecosystem and patent law. After AI creates an idea, stakeholders, investors, and inventors get clarity and consistency about ownership . This may boost innovation. This could increase AI research and development spending and improve programmer-user collaboration. Welldefined legal frameworks for AI-generated discoveries could protect intellectual property rights and encourage inventors to share their innovations. This could boost information flow and technology innovation. Well-crafted laws and regulations for AI-

generated technologies could reduce ownership and license issues and more constant and predictable innovation environment may arise. Identifying and assigning ownership rights to AI-generated innovations fundamentally impacts the innovation ecosystem and patent law. New laws and policies are needed to promote innovation, protect IP rights, and ensure everyone benefits from AI.

As AI becomes more involved in invention, new ethical problems around patent ownership and AI-generated innovations have arisen. AI and patent law improve fairness, accountability, and transparency, which are essential for innovation ecosystem trust. AI-created innovations and patent ownership's moral issues of equality, responsibility, and transparency are to be considered. AI-generated breakthroughs raise ethical concerns about patent rights distribution. In general, patent law has helped innovators and creatives. As AI systems improve at ideation, the question of whether humans should own inventions arises. Since AI systems lack awareness, intentionality, and moral agency, they may not be fair patent owners or inventors. AI patents could make human creators feel undervalued and alienated, which would undermine innovation ecosystem justice and equity. Others worry that AI inventors and owners may become too wealthy and powerful. If a few people or institutions controlled all AI-generated inventions, income and opportunity disparities may grow. Another key ethical dilemma is who is responsible for AI-generated breakthroughs. Unlike human innovators, AI systems use data and algorithms, which may contain bias, errors, or unexpected results, who is accountable if an AI development harms or violates rights. Legal and ethical challenges arise when determining AI innovation accountability. The user or owner of the AI system be accountable for its actions or its developer. How to ensure accountability for AI in complex ever-changing situations. Accountability for AI-generated inventions requires transparency and oversight to monitor and evaluate AI system actions. In addition, there must be clear legal frameworks and standards for evaluating injury liability. Transparency is another ethical consideration when considering AI-generated breakthroughs and patent ownership. Transparency is the availability of information about AI system invention, operation, and impacts. Patent law must be accessible to ensure that all parties participating in AI-generated innovations understand their history and possible effects. Openness promotes confidence, responsibility, and wellinformed judgments in the innovation ecosystem, morally. It enables users weigh the benefits and cons of AI technology, collaborate and exchange knowledge, and publish their discoveries. Transparency of AI-generated innovations is difficult due to their complexity and opaqueness. AI algorithms are opaque black boxes, making it hard to understand their decision-making process or spot biases

or errors. Due to private interests and IP concerns, AI developers may be reluctant to release sensitive material, which could limit openness initiatives.

Over time, technology, law, and public opinion will affect the relationship between patent law and AI. AI inventorship and ownership discussions may lead to clearer standards for determining who owns AI-generated innovations. Lawmakers and officials may change or pass patent laws to promote justice, accountability, inventiveness and ethical issues. Ethical concerns concerning AI-generated breakthroughs may be driving a focus on ethical norms for AI stakeholders, users, and developers. These norms could define responsible AI innovation as fairness, accountability, transparency, and social effect. Due to the complexity of AI-generated innovations and their effects on patent law, AI developers, policymakers, ethicists, and civil society organizations will need to collaborate more. Collaboration could focus on AI ecosystem best practices, ethical issues, and ethical innovation. Every stage of the innovation lifecycle may include ethical considerations about AI-generated innovations and patent ownership. Innovators, investors, and lawmakers may evaluate ethics and practicality when developing, testing, and deploying AI systems. Conforming new ideas to Stakeholders to create a balance between innovation and ethics is necessary. Innovation is needed to boost economic growth and social progress, but it must also protect rights, improve equity, and mitigate negative effects. Patent law and AI will evolve due to ethical considerations, new technologies, and heated debates. Legal, technological, ethical, and societal perspectives must be examined to resolve AI-generated innovation and patent ownership ethical problems. Policymakers and stakeholders may encourage responsible innovation, openness, accountability, and justice in AI technology to respect human values and ethical principles while benefiting society.

CONCLUSION

How patent law and AI interact, focusing on creator rights and AI invention ownership was examined. AI-generated innovations with significant societal impact are a direct result of the AI revolution that has swept various industries. Identifying the inventor of AI-generated discoveries is difficult because AI systems can independently create innovations. Because of this, we have to consider who should get credit for the innovation and patent rights. Legal view on whether AI is a patentable inventor is disputed. People disagree on whether patent law should be based on human inventorship or AI inventorship to foster innovation. Inventorship affects patent rights, which could cause disagreements between AI developers, users, and

owners of AI-generated creations. To overcome these challenges, we must promote fairness, accountability, and openness. AI-generated discoveries are being debated for their moral and legal implications, and lawmakers are considering methods to change patent laws to allow AI inventorship and ownership. For creativity, equity, and responsibility in the innovation ecosystem, AI-generated innovation ownership and inventorship must be resolved. Policymakers, legal experts, and stakeholders must collaborate to address AI's rapid growth. Lawmakers should promote inventiveness, novelty, industrial application and responsible innovation to ensure AI-generated inventions uphold ethics, safeguard rights, and advance society. By defining legal frameworks and standards for AI inventorship and ownership, stakeholders such as investors will have more certainty and confidence, encouraging innovation and technical development. Finally, patent law's relationship with AI has complex ethical, legal, and social effects. If carefully addresses the concept of ownership and inventorship- inventors, users and society may profit from AI's transformative power.

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